

52



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,039	07/19/2001	Jarmo Makinen	796.404USW1	8466
32294	7590	04/27/2004	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			DANIEL JR, WILLIE J	
			ART UNIT	PAPER NUMBER
			2686	

DATE MAILED: 04/27/2004

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,039

Applicant(s)

MAKINEN ET AL.

Examiner

Willie J. Daniel, Jr.

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 19 July 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4, 6, and 9.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on

- a. 31 December 2001
- b. 19 July 2001
- c. 28 January 2004

is in compliance with the provisions of 37 CFR 1.97 and is being considered by the examiner.

Specification

2. The disclosure is objected to because of the following informalities: FEC coder is "ref. 51" on pg. 8, line 26 and "ref. 50" on pg. 8, line 33.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by **Endo et al.** (hereinafter Endo) (**EP 0 847 146 A2**).

Regarding **Claim 1**, Endo discloses a method for controlling transmission power in a radio system having a transmitting end (201) and a receiving end (202) (see col. 11, lines 10-19; Fig. 2), the method comprising the steps of

transmitting a digital signal from the transmitting end to the receiving end (202) (see col. 11, lines 14-19; Fig. 2),

receiving said digital signal at the receiving end (202) (see col. 11, lines 14-19; Fig. 2),
monitoring signal quality at the receiving end (202) (see col. 11, lines 23-30; col. 12, lines 2-6), and

adjusting the transmission power at the transmission end (201) in accordance with the monitored signal quality (see col. 12, lines 17-40; Figs. 3-6), said monitoring and adjusting having the further steps of

monitoring frame error which reads on the claimed “pseudo error” occurrence at the receiving end (202) (see col. 11, lines 23-30; col. 12, lines 2-6; Figs. 3-6),

decreasing the transmission power when the rate of the pseudo errors is below a predetermined threshold (see col. 12, line 56- col. 13, line 41; Figs. 3-6), and

increasing the transmission power when pseudo errors occur so that a predetermined condition is fulfilled (see col. 12, line 56- col. 13, line 38; Figs. 3-6).

Regarding **Claim 2**, Endo discloses a method as claimed in claim 1, wherein the transmission power is increased immediately when a pseudo error is detected (see col. 13, lines 35-38), where the power is increased upon receiving the error report.

Regarding **Claim 3**, Endo discloses a method as claimed in claim 1, wherein the transmission power is decreased in small steps for a predetermined time period at each step (see col. 13, lines 2-18; col. 13, line 38 - col. 15, line 13; Figs. 3 and 4 '403), where the power is decreased to determine a favorable power in which the small steps would be inherent for decrementing the power.

Regarding **Claim 4**, Endo discloses a method as claimed in claim 2, wherein

(a) adjusting the transmission power after the set-up of the radio system to a value high enough so that no pseudo errors are detected at the receiving end (202) (see col. 13, lines 35-38), where the power is adjusted to a level in which is favorable without errors,

(b) decreasing the transmission power until the first pseudo error is detected (see col. 13, line 38 - col. 14, line 56; Figs. 3 and 4), where the power is decreased until an error (degradation) is determined,

(c) increasing the transmission power in response to the pseudo error detected (see col. 13, line 38 - col. 14, line 56; Figs. 3 and 4), where the power is increased when an error (degradation) has been detected, and

(d) jumping to phase (b) if no pseudo errors are detected during a predetermined time period after the transmission power has been increased in phase (c) (see col. 13, line 35 - col.

Art Unit: 2686

15, line 13; Figs. 3 and 4), where the power is monitored for error (degradation) according to the error rate in order for the power to be increased or decreased.

Regarding **Claim 5**, Endo discloses a method as claimed in claim 1, wherein the transmission power is increased by a small predetermined amount when said pseudo errors are detected (see col. 13, line 38 - col. 14, line 56; Figs. 3 and 4), where the power is increased when an error (degradation) has been detected in which the small amount would be inherent.

Regarding **Claim 8**, Endo discloses a method as claimed in claim 1, wherein the further steps of

monitoring the rate of actual errors at the receiving end (202) (see col. 11, lines 23-30; col. 12, lines 2-33; Figs. 3-6), and

increasing the transmission power temporarily to the maximum transmission power when a predetermined error rate threshold is exceeded (see col. 13, line 13-44; Figs. 3 and 4), where the error rate exceeds the threshold and power is maximum in which the power is at maximum until adjusted to a favorable level.

Regarding **Claim 9**, Endo discloses a radio system (see col. 11, lines 10-19; Fig. 2) including

at a receiving end (202) first means (SMa, SMb, 15a, 15b) for monitoring signal quality and for producing a control signal on the basis of the monitored signal quality (see col. 11, lines 20-45; Figs. 1-2), and

at a transmitting end (202) second means (15a, 15b) for adjusting the transmission power in response to said control signal (see col. 11, lines 20-45; Figs. 1-2),

Art Unit: 2686

wherein

said first means (202) being adapted to monitor the occurrence of pseudo errors and to produce a control signal indicating when the pseudo errors are detected and when the rate of the pseudo errors is below a predetermined threshold, whereby said second means (201) are responsive to said control signal by increasing the transmission power when the pseudo errors are detected and by decreasing the transmission power when the rate of the pseudo errors is below a predetermined threshold (see col. 11, lines 20-45; col. 12, line 51 - col. 14; line 44; Figs. 1-8).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-7 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Endo et al.** (hereinafter Endo) (**EP 0 847 146 A2**) in view of **Mallinckrodt (US 5,878,329)**.

Regarding **Claim 6**, Endo teaches of having a decoder (102) for detecting errors that are received and interpreted to adjust the power (see col. 11, line 49 - col. 12, line 3; Figs. 1-2). Endo fails to disclose having forward error correction (FEC) and a FEC decoder. However, the examiner maintains that having forward error correction (FEC) and a FEC decoder was well known in the art, as taught by Mallinckrodt.

In the same field of endeavor, Mallinckrodt teaches of using forward error correction (FEC) in the transmitted signal (see abstract; col. 9, lines 7-41; col. 11, lines 1-21; col. 12, lines 20-35; Figs. 7 and 9), decoding the signal at the receiving end by means of a FEC decoder (156) (see abstract; col. 9, lines 7-41; col. 11, lines 1-21; col. 12, lines 20-35; Figs. 7 and 9), and interpreting the corrections made by the decoder as pseudo errors (see abstract; col. 9, lines 7-41; col. 11, lines 1-21; col. 12, lines 20-35; Figs. 7 and 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Endo and Mallinckrodt to have forward error correction (FEC) and a FEC decoder.

The advantage of combining the teachings of Endo and Mallinckrodt is to correct errors of a received signal and to have power efficiency by minimizing power transmitted from a source to a user (see Mallinckrodt - col. 12, line 20-35; col. 13, lines 33-40).

Regarding **Claim 7**, Endo teaches of having a demodulator (101) detecting and correcting the power based on the error received (see col. 11, line 49 - col. 12, line 40; col. 13, line 57 - col. 14, line 8; Figs. 1-2), where the frame error is detected and extracted to determine according to the threshold or rate if the power needs to be increased or decreased. Endo fails to disclose receiving a symbol. However, the examiner maintains that receiving a symbol was well known in the art, as taught by Mallinckrodt.

Mallinckrodt further teaches of making a decision on a received symbol (see col. 9, lines 35-38; 50-56; Fig. 7), where the symbol detector (152) detects the symbol errors to be interpreted to adjust the power.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Endo and Mallinckrodt to receive a symbol.

The advantage of combining the teachings of Endo and Mallinckrodt is to correct errors of a received signal and to have power efficiency by minimizing power transmitted from a source to a user (see Mallinckrodt - col. 12, line 20-35; col. 13, lines 33-40).

Regarding **Claim 10**, Endo teaches of having a radio system as claimed in claim 9, wherein said first means (201) include a decoder (102) for detecting signals and errors that are received and interpreted to adjust the power (see col. 11, line 10 - col. 12, line 3; Figs. 1-2). Endo fails to disclose having a FEC decoder for decoding. However, the examiner

Art Unit: 2686

maintains that having a FEC decoder for decoding was well known in the art, as taught by Mallinckrodt.

Mallinckrodt further teaches of having FEC decoder (156) for decoding FEC coded signal (see abstract; col. 9, lines 7-41; col. 11, lines 1-21; col. 12, lines 20-35; Figs. 7 and 9), where the FEC decoder decodes the received signal according to the forward error correction to adjust the power.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Endo and Mallinckrodt to have a FEC decoder for decoding.

The advantage of combining the teachings of Endo and Mallinckrodt is to correct errors of a received signal and to have power efficiency by minimizing power transmitted from a source to a user (see Mallinckrodt - col. 12, line 20-35; col. 13, lines 33-40).

Regarding **Claim 11**, Endo teaches of having a demodulator (101) detecting and correcting the power based on the error received (see col. 11, line 49 - col. 12, line 40; col. 13, line 57 - col. 14, line 8; Figs. 1-2), where the frame error is detected and extracted to determine according to the threshold or rate if the power needs to be increased or decreased. Endo fails to disclose receiving a symbol. However, the examiner maintains that receiving a symbol was well known in the art, as taught by Mallinckrodt.

Mallinckrodt further teaches of making a decision on a received symbol (see col. 9, lines 35-38; 50-56; Fig. 7), where the symbol detector (152) detects the symbol errors to be interpreted to adjust the power.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Endo and Mallinckrodt to receive a symbol.

The advantage of combining the teachings of Endo and Mallinckrodt is to correct errors of a received signal and to have power efficiency by minimizing power transmitted from a source to a user (see Mallinckrodt - col. 12, line 20-35; col. 13, lines 33-40).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. **Endo et al. (US 6,035,210)** discloses *Transmission Power Control Apparatus For a Mobile Communication System*.
- b. **Weaver et al. (US 5,727,033)** discloses *Symbol Error Based Power Control For Mobile Telecommunication System*.
- c. **Nakano et al. (US 5,873,028)** discloses *Transmission Power Control Apparatus and Method In a Mobile Communication System*.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willie J. Daniel, Jr. whose telephone number is (703) 305-8636. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2686

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WJD,JR/wjd,jr
22 April 2004

Marsha D Banks-Harold
MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600